

## CLAIMS

What is claimed is:

1. A method for controlling Ethernet data flow on a synchronous digital hierarchy (SDH) transmission network, comprising:
  - a. setting a data buffer at receiving direction of a programmable logic array;
  - b. setting a receiving high threshold-value and a receiving low threshold-value for the data buffer.
2. The method according to Claim 1, wherein the data buffer is a synchronous data random access memory (SDRAM).
3. The method according to Claim 1, wherein size of the data buffer is determined by Ethernet data transmission distance on the SDH transmission network, delays of SDH facilities, stations number of network elements, delays of network elements, delay compensation of the SDH network, transmission rate of Ethernet ports and inner processing delay of Ethernet.
4. The method according to Claim 1, wherein the receiving high threshold-value and the receiving low threshold-value are determined by transmission distances of Ethernet data on the SDH transmission network, delays of the SDH facilities.

5. The method according to Claim 1, further comprising:
  - c. monitoring current data volume of the data buffer in real time and detecting whether the current data volume reaches the receiving high threshold-value;
    - d. if current data volume of the data buffer reaches the receiving high threshold-value, then sending out a flow control frame with time parameter at receiving end and returning to step c;
    - e. if current data volume of the data buffer does not reach the receiving high threshold-value, then detecting again whether the current data volume reaches the receiving low threshold-value of the data buffer; if it so, then sending out a flow control frame with zero time parameter at receiving end and returning to step c; otherwise, returning to step c directly.

6. The method according to Claim 5, wherein the time parameter in a flow control frame is the longest time for pausing data sending at sending end, and the time parameter is defined by the standard protocol.

7. The method according to Claim 5, wherein the receiving high threshold-value and the receiving low threshold-value are determined by transmission distances of Ethernet data on the SDH transmission network, delays of the SDH facilities.